

a synthetic muscle fluid displacement means for causing fluid flow through said main body, said fluid displacement means having a flexible main body and extending across said interior chamber;

a source of electrical power for generating electrical pulses, said source of electrical power electrically connected to electrodes disposed on opposing sides of said synthetic muscle fluid displacement means;

whereby the application of electrical pulses to said electrodes causes oscillating movement of said fluid displacement means.

10. The assembly of claim 9 wherein said source of electrical power is a subcutaneously implanted inductively coupled coil.

11. The assembly of claim 10 including sensing means for sensing pulses in said inductively coupled coil, and micro processing means electrically connected to said coil for acquiring and processing said pulses.

12. The assembly of claim 11 wherein said sensing means is an adjacent coil, and said micro processing means controllably gates electrical pulses to said adjacent coil.

13. A bio-implantable pump assembly comprising:

a substantially planar main body having an anterior end, a posterior end, and an interior chamber;

an intake conduit, said intake conduit fluidly coupled to said anterior end and an outlet conduit fluidly coupled to said interior chamber;

a first valve means for selectively allowing fluid flow from said intake conduit to said interior chamber, a second valve means for selectively allowing fluid flow from said interior chamber into and through said drainage conduit;

fluid displacement means for causing fluid flow through said main body, said fluid displacement means being formed from a synthetic muscle material and having a flexible main body extending across said interior chamber, a first electrode positioned on a top surface of said main body and a second electrode positioned on a bottom surface of said main body;

whereby said fluid displacement means can be deflected upward to allow fluid flow past said first valve means into said interior chamber by applying an electrical signal to said first electrode, and said fluid displacement means can be deflected downward to force fluid flow from said interior chamber past said second valve means by applying an electrical signal to said second electrode.

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